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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,847	08/25/2006	Kyuhei Kitao	3273-0227PUS1	3804
2292 7590 09/28/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER				
MCCULLEY, MEGAN CASSANDRA				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
09/28/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/590,847

**Applicant(s)**

KITAO ET AL.

**Examiner**

Megan McCulley

**Art Unit**

1796

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-12 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-12 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date 5/6/2009.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application.
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

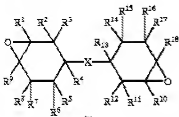
Claims 7-12 and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The subject matter not described in the specification is that the distillation is carried out in a single pass and is found in claim 7, second from the last line. There is no description of a single pass distillation process found in the specification, but there is support for a single stage batch distillation (para. 64, publication).


***Claim Rejections - 35 USC § 103***

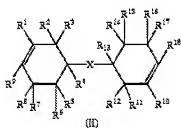
The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 7-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takai (US 2003/0059618) in view of Ryan et al. (U.S. Pat. 5,880,297).

Regarding claims 7- 9, 15: Takai '618 teaches a process of producing a



compound of  wherein X represents a divalent group selected from oxygen atom, a sulfur atom, -SO-, -SO<sub>2</sub>-, -CH<sub>2</sub>-, -C(CH<sub>3</sub>)<sub>2</sub>-, -CBr<sub>2</sub>-, -C(CBr<sub>3</sub>)<sub>2</sub>-, and C(CF<sub>3</sub>)<sub>2</sub>-; R<sup>1</sup> to R<sup>18</sup> each may be the same or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have substituent groups (para. 23 and 24), the process comprising starting with an olefin of the structure:



(para. 23) is epoxidized with peracetic acid (para. 51) having

substantially no water (para. 26), followed by removing the solvent ethyl acetate (para. 55) by distillation (para. 58). The purity of the compound is 93.4% (Example I-1). As evidenced by the instant specification (the instant Comparative Example 1 is identical to the process of Takai, Example I-1), the concentration of impurities having a shorter retention time than the compounds is 11.9%, which is within the claimed range and the concentration of reactive intermediates, of which the instant formula (III) is one, is 2.0% also within the claimed range (instant comparative example 1).

Not disclosed is the distillation step occurs with a wiped film evaporator carried out in a single pass at a heating temperature of 180-350 °C and a pressure of 1-50 Torr. However, Ryan et al. teaches a wiped film evaporator used in a single pass to distill and purify epoxies (abstract, example 1). Takai and Ryan et al. are analogous art since they are both concerned with the same field of endeavor, namely methods of obtaining pure , reduced color epoxies. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the wiped film evaporator of Ryan et al. with the process of Takai and would have been motivated to do so for such desirable properties as obtaining a low color product which is highly pure, as evidenced by Ryan et al. (col. 2 lines 54-63). Further, the operating temperature and pressure of distillation are result effective variables which can be optimized. See *In re Aller*, 105 USPQ 233 and MPEP 2144.05. At the time of the invention a person having ordinary skill in the art would have found it obvious to optimize the temperature and pressure of the distillation step and would have been motivated to do so since Ryan et al. teaches elevated distillation temperatures may lead to additional by-product reactions, which adds to the coloration of the epoxy (col. 2 lines 54-63 and col. 4 lines 1-13), while the temperature needs to be adequate to make the composition flowable (col. 5 lines 5-10). Also the pressure is dependent on the desired temperature for a specific epoxy (col. 5 lines 10-15). Further, the ranges disclosed in Ryan et al. as being typical fall within the claimed ranges (pressure 0.05-50 mm Hg, temperature 100-200 °C col. 5 lines 15-20). A prima facie case of obviousness may be rebutted, however, where the results of the

optimizing variable, which is known to be result-effective, are unexpectedly good. See *In re Boesch and Slaney*, 205 USPQ 215.

While the concentration of the high-molecular-weight components having an elution time shorter than that of the alicyclic epoxy compound is not disclosed, it is the position of the Office that the low concentration is a latent property achieved during the distillation step. Evidence of this is found in Ryan et al., which teaches distillation removes lighter components (col. 4 lines 50-55) and heavier components (col. 4 lines 66-67) than the desired compound.

Regarding claim 10: While the color hue of 60 or less is not disclosed, it is the position of the Office that the color hue is a latent property achieved during the distillation step. Evidence of this is found in Ryan et al., which teaches distillation removes heavier components (col. 4 lines 66-67) than the desired compound which add to the coloration of the epoxy (col. 2 lines 54-63).

Regarding claim 11: Takai '618 teaches the peracetic acid is obtained by the oxidation of the corresponding aldehyde (para. 25).

Regarding claim 12: Takai '618 teaches the water content of the peracetic acid is 0.8% by weight or less (para. 26).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 7 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 20 of copending Application No. 11/792,782. Although the conflicting claims are not identical, they are not patentably

The diagram shows a benzene ring with a central substituent  $X$ . The ring is numbered 1 through 18, starting from the top-left carbon and proceeding clockwise. The numbering is as follows: R1 (top-left), R2 (top), R3 (top-right), R4 (right), R5 (bottom-right), R6 (bottom), R7 (bottom-left), R8 (left), R9 (top-left, adjacent to R8), R10 (bottom-right, adjacent to R9), R11 (bottom, adjacent to R10), R12 (bottom-left, adjacent to R11), R13 (top-right, adjacent to R12), R14 (top, adjacent to R13), R15 (top-left, adjacent to R14), R16 (top, adjacent to R15), R17 (top-right, adjacent to R16), and R18 (right, adjacent to R17). The substituent  $X$  is located at the center of the ring, between R4 and R5.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant's arguments with respect to claims 7-12 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Thursday 7:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

/M. M./  
Examiner, Art Unit 1796